

Listing of Claims:

1. **(Original)** A process for formation of a layer of tantalum pentoxide (Ta_2O_5) on a carrier material, comprising:

heating carrier material to a heating temperature of between approximately 200°C and 400°C; and

circulating a gas mixture comprising tert-butyliminotris (diethylamino) tantalum ($\text{t-BuN}=\text{Ta}(\text{NEt}_2)_3$) in contact with the heated carrier material under an oxidizing atmosphere thereby forming a layer of tantalum pentoxide (Ta_2O_5) on the carrier material, the partial pressure of the tert-butyliminotris (diethylamino) tantalum being greater than or equal to 25 mTorr.

2. **(Original)** The process according to Claim 1, wherein the heating temperature is between approximately 300°C and 350°C.
3. **(Original)** The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the partial pressure of the tert-butyliminotris (diethylamino) tantalum is less than the vapor pressure of tert-butyliminotris (diethylamino) tantalum corresponding to the temperature of the coldest point in the chamber.
4. **(Original)** The process according to Claim 1, wherein the partial pressure of the tert-butyliminotris (diethylamino) tantalum is between approximately 65 mTorr and 70 mTorr.

5. **(Original)** The process according to Claim 1, wherein the gas mixture comprises oxygen.
6. **(Original)** The process according to Claim 1, wherein the gas mixture comprises a carrier gas, for example nitrogen.
7. **(Previously Presented)** The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 0.1 second and 10 minutes.
8. **(Original)** The process according to Claim 1, wherein the carrier material is a semi-conducting material, for example silicon.
9. **(Original)** The process according to Claim 1, wherein the carrier material is a metallic material.
10. **(Previously Presented)** The process according to Claim 1, wherein the carrier material is chosen from the group formed by titanium nitride, tantalum nitride, copper, platinum, aluminum, titanium, tantalum and ruthenium.
11. **(Original)** The process according to Claim 1, wherein the carrier material is a dielectric material.

12. **(Previously Presented)** The process according to Claim 1, wherein the carrier material is chosen from the group formed by silicon dioxide (SiO_2), silicon nitride (Si_3N_4), alumina (Al_2O_3), ZrO_2 and HfO_2 .

13. **(Original)** The process according to Claim 1, wherein the thickness of the layer of tantalum pentoxide formed is of the order of a few tens of nanometers, for example 44 nanometers.

14. **(Original)** The process according to Claim 1, wherein the carrier material is positioned on a circular wafer having a diameter of substantially one of 200 mm and 300 mm.

15. **(Original)** The process according to Claim 1, wherein the layer of tantalum pentoxide is for incorporating in one or more electronic integrated circuits.

16-39. **Canceled**

40. **(Previously Presented)** The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 1 second and 10 seconds.